ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. V. NOVEMBER, 1894. No. 9.

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BENJAMIN DANN WALSH.

We present this month a picture of a deceased American entomologist of note. The picture is from a photograph in the album of the American Entomological Society. Mr. Walsh at the time of his death was senior editor of the "American Entomologist," an excellent journal, copies of which are now very scarce. Mr. Walsh was succeeded as editor by Prof. C. V. Riley, who gave a very interesting account of the life and works of Mr. Walsh in the number of the journal published for December and January; 1869–70, from which we take the liberty of extracting the following: "On Friday, the 12th of November, 1869, Mr. Walsh started in excellent spirits on his usual morning walk to the post-office, and on his return, while walking on the track—the track of the Chicago and Rock Island Railroad, he suddenly noticed the passenger train for Chicago slowly nearing him. Stepping aside he continued his way on what he supposed was a side track, down which the train in reality came, though he did not discover his mistake until the engine was close upon him. His left foot

was caught and terribly mangled. The foot was amputated above the ankle, and Mr. Walsh bore the operation remarkably well and soon became quite cheerful, displaying his facetiousness by declaring in the most philosophical spirit, that nothing more fortunate could have happened to him. 'Why,' he would say to his grieving wife, 'don't you see what an advantage a cork foot will be to me when I am hunting bugs in the woods? I can make an excellent pin-cushion of it, and if perchance I lose the cork from one of my bottles I shall simply have to cut another one out of my foot.' Shortly after he died, as a result of the injuries sustained. Mr. Walsh was born in Frome, Worcestershire [Somersetshire], England, on the 21st of September, 1808, and was therefore in his sixty-second year. He came to this country in 1838. The first published account that we can find of Mr. Walsh as an entomologist is in the report of a lecture which he delivered before the Illinois State Horticultural Society at the Bloomington Convention in January, 1860. After this he became a regular contributor to a number of agricultural journals, and also published papers in the 'Proceedings' of the Boston Society of Natural History, and in the 'Proceedings' of the Philadelphia Entomological Society. He was a school-mate with Darwin, and though he took up the latter's work on the 'Origin of Species' with great prejudices against the development hypothesis, yet he became a convert to evolution after he had once studied it. In October, 1865, The Entomological Society of Philadelphia commenced the publication of a monthly bulletin entitled the 'Practical Entomologist.' This journal was edited by the publication committee of the society, consisting of E. T. Cresson, Aug. R. Grote and J. W. McAllister. Very soon, however, Mr. Walsh was added to the list as associate editor from the West, and he finally became sole editor of the second volume. So well had he succeeded in opening the eyes of the people of his own State to the vast importance of economic entomology that the State Horticultural Society at last petitioned the Legislature to appoint a State entomologist, and, accordingly, at the session of 1866–67 a bill was passed authorizing the appointment of such an officer with a salary of $2000 per annum, the appointment being vested in the Governor, by and with the consent of the Senate. As Acting State Entomologist he issued his first annual report for 1867."

MT. WASHINGTON AGAIN.

By Annie Trumbull Slosson.

Mt. Washington certainly knows and appreciates its true friends. It treats with warmth, sunshine and geniality those who seek it year after year in the right spirit. Again I had on the summit this season a whole week of ideal weather for collecting. We went up the mountain in the afternoon of July 16th. The day had been bright, warm and still. Our old friend the sphagnostic was again with us, carrying his big tin botanical case for holding peat-mosses from the Lake of the Clouds, dwarf willows and other alpine specimens. But the two mouse hunters of last summer, and the enthusiastic botanist from Boston were absent and sadly missed. As usual, I began to find specimens just as soon as I arrived. The window of my room furnished at once several interesting insects, chiefly Diptera. One of these has been pronounced by Mr. Coquillett a new species of *Sapromyza*, and given by him the MS. name of *washingtoniæ*, in honor of our grand old mountain. Day after day of the same bright, warm, still weather succeeded. In the middle of the day the sunshine was really too warm for comfort. One noon the thermometer recorded 90° on front platform; I, never before saw so much insect life on the mountain. In fact, I have rarely seen as much in any locality. The air swarmed with tiny creatures, flies, gnats, aphidæ, winged ants. Strangely enough, the insect fauna seemed quite unlike that of a year ago. Not one of the brilliant beetles, *Corymbites resplendens*, so very plentiful last year, was taken; nor did I see *Anthophilax attenuatus*, *Scotodes americanum* or *Cephaloon lepturides*, all common last season. But I added so many fine insects to my list not seen hitherto that I did not deeply regret the absence of the old friends. For the first time in all my collecting on the summit I took a few moths in the evening at light. On three successive nights moths flew into the hall of the hotel and were captured; I took thus several specimens of that fine noctuid, *Carneades opipara* Morr., two of *Pachnobia wockei* Moeschler, and one *Semiophora elimata*, the *badicollis* of Grote's list. Two or three Geometridæ also came in and a few microlepidoptera; and one evening, quite late, just as I had given up the hope of any capture that night, there flew in and settled on the wall a fine, fresh moth quite new to me. It seemed to be

an Agrotid, but I could not place it. Dr. J. B. Smith pronounces it *Carneades dissona*, of Moeschler, described from Labrador, and apparently never before recognized in this part of the world. It is a pretty moth with wings of an even, soft, purplish gray, and distinct markings. There are touches of ochreous brown on the primaries not mentioned in the description as given in Smith's "Revision," and probably not evident in the Labrador insects, as Dr. Smith writes me that mine is much the best-preserved specimen he has ever seen. A day or two after this capture our good friend, the sphagnostic, found a moth, probably the same species, down near the alpine garden. But it is so worn and faded as to be questionable. On one of these phenominally warm evenings one of the employés of the hotel told us that there was a "tree toad" peeping down below. We went out upon the platform and soon heard plainly the familiar note of a *Hyla*. It came from down the carriage road and was traced by one of our party, who investigated the matter, to a little pool about a hundred and twenty-five feet below the summit. The little "peeper" was not captured, but was probably *H. pickeringii*. It was the first time any of us had ever heard this sound on the summit, but I have since been told that there are *Hylas* in the Lake of the Clouds.

The warm, white, wooden walls of the Summit House were again my best hunting-ground. At least once in two or three hours I visited them and gathered in the spoils. Here I took, as once before, an *Ægeria*, fresh and unworn. This time it was the *Albuna montana* Hy. Edw., a form I often capture in Franconia; and here were found Coleoptera, Hymenoptera and Diptera in abundance. *Ichneumon w-album*, a gaily marked species of black and yellow, was this year exceedingly numerous; I could have taken hundreds of specimens on the sides of the house, flying about the rocks, or along the carriage road. I took three specimens of the odd, wasp-like longicorn beetle, *Bellamira scalaris*, near the house, the first I had ever found on the mountain. *Simplocaria metallica* was one of the most common beetles under stones and sticks, or crawling on the ground; last season I saw but one. Austin's list speaks of it as "found in the greatest abundance under stones near the six-mile mark." This list also refers to *Salpingus virescens* as "not rare on the summit," but I have never seen it till this season, when I took one specimen

on the ground near the platform. It seems to be a rare insect in collections.

Sawflies were abundant, and I found on windows and walls, and about plants, *Tenthredo grandis*, *T. tricolor*, *T. variata*, *Macrophya nigra* and many other species; and I took one day, resting on the floor of platform, a single specimen of *Lyda semidea* Cress. In Parasitica, too, I found some rare things; among others several specimens of a *Euceros*, which Mr. Davis pronounces new.

But it was in Diptera that I made my most interesting captures. Flies were swarming and buzzing everywhere. Around every tuft of arenaria, or spike of mountain golden-rod, hovered *Echinomyia florum* Walk., a big black fly with sides of abdomen deep red; with it flew *Jurinia algens* and many Syrphidæ. Of this last family *Syrphus torvus* and *S. contumax* were the most common. *Didea laxa*, with its markings of greenish blue, is not rare. This was first described by Osten Sacken from the White Mountains. It was interesting to re-find so many of the species named by that pioneer in this branch of our science, some of them having been rarely, if ever, found since their description by him. One day in my room I saw resting on the outside of a pane of glass in the upper sash of my window an odd fly. It was not an easy thing to capture it, but I managed to reach out and upward and place the mouth of my poison-bottle over the insect; an hour later I found a duplicate on the parlor window. It proved to be a very interesting insect, *Arthroceras leptis* O. S. It is described in a note at the end of Catalogue of Diptera from three females taken by E. P. Austin in White Mountains, and, as far as I can ascertain, has not since been found. Osten Sacken refers to it as a "remarkable insect, looking like a *Leptid* with the antennæ of a *Cœnomyia*." Mr. Coquillett writes to me of it as "a most interesting form, completely uniting the two families Xylophagidæ and Leptidæ." It was first placed by describer in the genus *Arthropeas*. On a bit of golden-rod growing between the rocks near the barn I took another very rare fly, *Temnostoma venustum* Willst. This is a large, handsome black and yellowish striped fly not unlike a hornet (*Vespa*) in appearance. Of this Mr. Coquillett writes: "Your specimen is the second one known to exist in collections, and your capture is a most interesting one." The type is in the National Museum, and was taken by Mr. S. Hen-

shaw in White Mountains. I added, this summer, to my list of Mt. Washington Diptera between seventy and eighty species. Of these, at least five or six are entirely new to science, and some ten or twelve have never before been recognized in N. America. While out in the sunshine the "black fly" (*Simulium*) was very troublesome, flying about one's head and biting as in the lower country. The species is *S. piscicidium*.

In Arachnidæ I found some interesting things. The large red mite discovered by me last year and described by Mr. Banks as *Oligolophus montanus*, was abundant, crawling everywhere over the rocks and ground, or on leaves of plants. I took nineteen species of spiders, only two of which were included in last list. Of these one is a new species and has been given, by Mr. Banks, the manuscript name of *Dismodicus alpinus;* another, a *Dendryphantes* is probably new.

The tame chipmunk which for two summers has come familiarly about the house for food and petting was there again, and with him, this season, running about fearlessly among the rocks below the platform and feeding on the fragments of luncheons thrown there by tourists or swept out by bell boys, was a mole.

One day we saw two large eagles soaring overhead. Lowland insects which must have come from far below are found on the summit from time to time, and we wonder at the long upward flights those gauzy, frail wings can accomplish. A few days before I went up the mountain Miss Clark, of the Summit House, to whom I owe many of my rarest specimens, found in the hotel a *luna* moth. It was a well-preserved, almost fresh specimen, the first I have ever seen at such an elevation. We took but one *Argynnis montinus*, evidently a freshly emerged one. It was too early for that mid-summer visitant; but *Chionobas semidea* was there in plenty; and of *Plusia vaccinii* and the two *Anartas, schoenherri* and *melanopa*, we could have taken hundreds about golden-rod, the white cinque-foil and arenaria.

And so with alpine birds, blossoms, bugs and beasts, the week flew swiftly by, and we were very sorry, as we always are, to come down to the lower world again.

Grandma—"I see that the locusts with a 'W' on their wings are out again. It means 'War' whenever they appear." Miss Laura—"Not this time, grandma. It means 'Woman.' This is the era of her emancipation."—*Indianapolis Journal.*

Number of Annual Broods in Harpiphorus maculatus Norton.

By F. M. WEBSTER.

The number of annual generations of the strawberry saw-fly, *H. maculatus*, has been an unsettled question among entomologists for many years. Riley, in his 9th Missouri Report, states positively that there are two broods, one appearing in April and another in June and July. In the Report of U. S. Commissioner of Agriculture for the year 1887, p. 152, the writer recorded the occurrence of larvæ, from two-thirds to nearly full grown, on strawberry in Wayne County, Indiana, on Oct. 5, 1887. These larvæ were determined as belonging to this species by some of Dr. Riley's assistants, and furthermore, according to the studies of Mr. Mally, "Insect Life," iii, p. 10, they seemed to agree with others from which Prof. Forbes reared the species now under consideration. I did not, as Mr. Mally states, rear adults from the Indiana larvæ, but relied on the determinations received from Washington. A year or so later, on July 3d, in the garden of Hon. E. H. Scott, Mayor of the city of LaPorte, Ind., I saw nearly full grown larvæ in numbers sufficient to quite defoliate the strawberry plants on which they were depredating. Not being provided at the time with facilities for studying the insect in confinement, nothing more was done until July, 1893, when being provided with better facilities for this kind of work, I wrote Mr. Scott asking him to kindly send me a lot of larvæ. On July 5th I received a large number in fine condition, which were at once placed in a breeding-cage on strawberry plants, upon which they finished their development and entered the earth. Nothing more was seen of the insect in any stage until March 19, 1894, when adults appeared in the cage which had been kept all Winter in the insectary, and a few days later were present in considerable numbers. In their old home in the garden at LaPorte, the larvæ appeared simultaneously with, or a little in advance of the ripening of the earliest berries. Though considerably in advance of this, in the insectary, the larvæ were on hand at a time exactly corresponding with the development of the fruit, showing that the natural order of things had remained practically unchanged, the insect having only kept pace with the plants, and that, in this case and under the most favorable environment, the species was single brooded. The Wayne County larvæ were found at lat.

39° 51′ N., while LaPorte is in lat. 41° 35′ N., a difference of about two and a quarter degrees. The altitude of the Wayne County locality is about 960 feet above sea-level, and LaPorte is probably not far from 750 feet, showing that the season could not have been, normally, more than a fortnight earlier at the southern locality. The Reports of the Indiana State Weather Service show a difference of about 2° in the mean annual temperature between the two localities. The larvæ from LaPorte did not differ in appearance from those found in Wayne County, nor from those figured by Mr. Mally (loc. cit. vol. ii, p. 140). The method and locality of oviposition on that plant were both as described of this species, and as this has not before been shown I have illustrated it in the accompanying figure, the eggs being placed in the leaf stalks, just under the epidermis. On developing, the eggs increase in size and show as distinct blotches. In the figure these blotches are shown as after vacated by the young larvæ, except in one case where the epidermis is cut away to show the unhatched larva. The adults reared from the larvæ from LaPorte were the ones ovipositing in the leaf from which the drawing for this illustration was made, and were determined by myself, and later, in order that there might be no possibility of error, I sent them to U. S. Entomologist, Mr. L. O. Howard, whose determination sustained my own in every particular.

A PICTURE for the album of the American Entomological Society has been received from Joseph L. Hancock, M.D.

NOTES COMMON OR OTHERWISE.

By ARTHUR J. SNYDER, North Evanston, Ill.

Calocampas are early flyers. One *curvimacula* was taken April 4th, several *C. nupera* were taken during same month at sugar. During warm, bright days of Winter and very early Spring, a visit to maple trees, from which the sap is running, will repay the collector if he wishes *Grapta j-album* or *Vanessa antiopa*.

Many fine Sphingidæ, as well as other good things, may be secured by visiting the blossoms of the various species of milkweed at dusk. On June 11th a fresh specimen of *Amphion nessus* was caught in the hand as it was flying about a crack in a barrel used as a leach for manure. A few plants of nicitiana, a bed of petunias and one of verbenas, are good things for an entomologist's flower garden.

At least forty *Plusias* were taken on the evening of August 9th from a bed of verbenas. On the same bed I have, during one week, taken *P. simplex*, *P. precationas*, *P. octoscripta*, *P. biloba*, *Deilephila lineata*, *Papilio asterias*, *P. turnus*, *P. cresphontes*, *Danais archippus*, *Limenitis disippus*, *Nemeophila noctuella*, and several micros. Larvæ on plants often drop, by means of a web, to the ground when the plant is touched by the collector.

One day in July a male and female *Colias philodice*, which were near each other, were taken at a sweep of the net. On holding the female and releasing the male the latter refused to go away, but continued to flutter about the hand which held the female for at least five minutes, when the female was finally released the pair flew away together.

One badly battered specimen of *Erebus odora* was taken here late in the season of 1893. One was seen about the same time at sugar on two successive nights. On August 9th, this year, a fine, large specimen was found on the wall beneath my back porch.

The larvæ of *Homoptera edusa*, and of some species of *Catocala* vary but little in appearance, though the former are smaller. Both may be found on willow.

A larva found on grass and supposed to be *Acronycta oblinita* (a species which I have reared before on smartweed) fed heartily on "black heart," a plant closely resembling the common smartweed, and produced a perfect imago of *Arsilonche henricii*.

A larva of *Plusia precationis* was matured on lettuce leaves and changed to chrysalis, without earth in glass.

On August 9th a pupil brought me a Katydid which is pink in color, not merely tinged with pink, but of a deep reddish pink, very unlike any specimen I ever saw. Are such specimens common?* On the same evening another insect of the same species but of the usual color, except that its "musical instrument" was brown, repeated its notes again and again for the benefit of several spectators who had never seen the noise produced, when held by the tips of its wings and allowed to take hold of some object with its feet and then pulled backward until its hold was loosened, the upper forward part of its wings which overlapped produced the usual sound Ka-ty! Ka-ty! very distinctly, and in rapid succession. It seems impossible that so small and simple an instrument should produce so loud a sound.

On June 29th a *Callimorpha lecontei* was started from the grass in an open spot in the woods when a large dragonfly darted down, captured it, and flew to a basswood leaf near by. On another day while looking for larvæ a small moth was started when a robberfly immediately pounced upon it. Several times I have noted the large green and gold beetles on sugared trees at night holding moths which they had captured. Spiders often capture moths; the largest species I have seen them take is *Hadena devastatrix*.

A pair of phœbe birds frequent a tree in the front yard and watch for insects. One caught a *Pieras rapæ* and devoured it, then darted at a *Papilio asterias*, but was frightened away by its fluttering. A cat one evening proved very successful in catching a specimen of *Protoparce celeus*. It seemed satisfied, however, to simply play with its prisoner.

In conclusion, I wish to make note of two rather uncommon butterflies. In June last season one *Amblyscirtes samoset* was taken, and in same month this year I secured three more. On July 12th, this season, a *Libythea bachmani* was seen on grass near sidewalk, but on securing a net was not able to capture it. I have only seen one other specimen of this species and captured that at Farnia, Ill., in 1892.

* A Katydid "of a deep reddish pink" was found in the woods near Wood's Holl, Massachusetts, on August 12, 1894, by Miss S. E. Ives. Several years ago, a similar specimen was exhibited at a meeting of the Entomological Section of the Philadelphia Academy.—Eds.

Relationship Between Pyralidina and Pterophorina.

By GEO. D. HULST.

In ENT. NEWS, September, 1894, pp. 208–10, is an article by Mr. J. W. Tutt, F. E. S., "On the absence of relationship between the Pyralidina and Pterophorina." Upon the subject matter I wish to comment. I perhaps ought not to refer to personal matters, but I suggest that it is not argument to speak of Prof. Fernald as a "would-be teacher" and a "propounder of exploded notions." Every specialist in *Microlepidoptera* the world over, will accord Prof. Fernald an ability second to no other, and is aware that no one is more desirous of obtaining, or has made more effort to get at all facts, or is more conscientious in his deciding upon their merits. But as to classification I may suggest that fretful scolding will not add to our respect for the views certain ones place before us. Americans will try to decide upon a subject on its merits, and will not swallow what is offered fearing lest we should be scolded or called bad names (scientifically), or because it is labeled "from Europe," or has the imprint of the reigning scientific fad upon it. I have examined the classification of the Pyralidina by Mr. Meyrick, and have studied his classification of the Geometrina. I have no hesitancy in saying that my decided conviction is, they are both far in advance of any systems yet proposed; more natural, more definite, much more in accord with the probabilities of evolution, and in every way more scientific. That "no lepidopterists of repute in Britain have accepted his classification" may be true, but nothing as yet published has suggested that, apart from him, Britain has any "lepidopterist of repute" in the Pyralidina. That Mr. Meyrick's classification will be endorsed as the best by every specialist, I have no doubt.

Mr. Tutt criticises Mr. Meyrick's classification, yet in a footnote, page 209, indirectly acknowledges he has not examined this classification, which Prof. Fernald follows. Mr. Tutt claims that what he calls the Pterophorina and the Alucitina "must be divided into two distinct families." That is just what Mr. Meyrick does, and at some length states his belief in their wide divergence.

"Orneodidæ," is a name of Mr. Meyrick, but it is a name predestined by circumstances. Mr. Tutt may for his purposes or pleasure propose types for genera and families, but as this was

done a century and a quarter and more ago by Linnaeus, Geoffroy and Fabricius, and as science decrees, priority must determine what these and other men did must be respected; *hexidactyla* is not, and cannot be the type of *Alucita*. The first definite generic name applied to it was *Orneodes*, and the family name under scientific law must be based on that. Mr. Meyrick expresses his regret that he must use this name, but he has no choice.

Mr. Tutt demands that the early stages of the insects should be regarded in classification, and suggests, at least, that the "would-be teachers" of America have never done that, and that it was never done till light came from London. All scientists, from the beginning, have recognized what is thus demanded, and not one has hesitated to adopt what has been shown to be of value. The fundamental terms in part show this; Geometrina, Tortricina, and as well the names of almost numberless genera based upon some peculiarity in the earlier stages. But Mr. Tutt gives the facts upon which he bases his sneer at Americans, his scolding of Lepidopterists in general, and his own belief in the so-called "up-to-date science." Let us look into them.

The "Alucitina" and "Pterophorina" "are distinct families, and have no affinities." First. In the "Alucitina" the *larva* has a complete circle of hooks to ventral prolegs. We are left to suppose the Pterophorina do not. If so, of what importance is the difference? The ventral prolegs are special modifications for use in an immature stage. At best they correspond in character, though not in importance, to the similar organs in the mature stage, such as the tongue, wings, etc. What is in the mature stage is comparatively of greater importance, as the organism has reached its consummation. The presence or absence of the tongue is of more account than the presence or absence of the ventral legs in the larva. But the ventral legs are modifications of the integument only, entirely thrown off with the stage in which they exist, and correspond exactly to other special organs as the modification of the end of the body into a horn, or the hind legs into scent organs and whips for defence against enemies. The tongue and wings have an existence through two stages, the pupal and the imaginal, and are not parts of the integument, but of the skeleton and the internal systems. They are far more essential, far more individual, and necessarily far more distinctive and important in classification. At most the differences suggested would warrant generic separation.

Second. The *pupa* of the "Alucitina" "is smooth and rounded, laterally solid, inner dissepiments flimsy." In the "Pterophorina" the pupa "is less solid and rounded, appendages often partially free." I submit we must have something more definite than this for even specific separation! "Less" and "often" are not scientific distinctions.

Third. In the Pterophorina the pupa "is attached by a cremaster." We are not told concerning the "Alucitina," but if they have it not, the remarks under first item above apply. The same method in the Geometrina would separate as distinct families *Anisopteryx pometaria* Harr. and *Paleacrita vernata* Peck., as the imago in the latter has a circle of hooks on each abdominal segment.

Fourth. "Dehiscence from the pupa in one case is regular, in the other irregular." Surely one is hard run for facts to use this as a basis for family separation!

Fifth. Finally, in the "Alucitina" the free segments in both sexes are the fifth and sixth abdominal. In the Pterophorina free segments may extend upwards to the third abdominal; the 7th abdominal segment is always free in the male, fixed in the female." That is, the Pterophorina have more free abdominal segments in the pupa. This is uncertain, however, as it is guarded by a "may," although there is a sharp distinction in the 7th segment. The declaration is, there is more difference between the two sexes of one family than between the two families, or to put it another way, a difference which is variable and uncertain, is made a basis for family distinction, while a wider permanent difference is acknowledged to be a secondary sexual character in an immature stage.

We Americans are ready to take anything of any stage of existence as assisting in classification. We are willing to take anything—artificial, Darwinian, or biological. We are willing to use any light of any kind we can find, but we are still waiting for light.

TRANSACTIONS of the American Entomological Society, vol. xxi, No. 4, now in press, will contain a "Catalogue of the Coleoptera common to North America, northern Asia and Europe, with distribution and bibliography, second edition, by John Hamilton, M.D."

ENTOMOLOGICAL NEWS.

Published monthly (except July and August), in charge of the joint publication committees of the Entomological Section of the Academy of Natural Sciences, of Philadelphia, and the American Entomological Society. It will contain not less than 300 pages per annum. It will maintain no free list whatever, but will leave no measure untried to make it a necessity to every student of insect life, so that its very moderate annual subscription may be considered well spent.

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PHILADELPHIA, PA., NOVEMBER, 1894.

AN EXPERIENCE.

SOME time ago a very talkative and plausible young man came to Philadelphia from New York (or that vicinity) in quest of money to aid him in an entomological trip to somewhere. He found it (the money) in goodly quantity, to our sorrow. It has been intmated that he went to Florida, and as far as anything having materialized goes, we are led to believe that there are no insects in that country. The whole thing was a swindle, and it is a question whether any one should consent to buy a "pig in a poke" as it is entirely an "unbusiness-like" proposition. We have learned wisdom by experience, and the next fellow that comes along will have trouble in "raising the wind." We have never known of any adequate return for money expended in advance for expeditions, etc., as far as entomological specimens are concerned. Some of our New York friends were also losers by this same party, and perhaps also some Washington entomologists. Our foolish confidence will doubtless serve as a warning to our friends not to pay for things in advance, especially insects. Was our money stolen?

Bergrothia steelii was found in some numbers this month (September) on *Larrea* near the N. Mexico Agricultural College. Some further consideration of the evidence leads me to think that it may be more correct to write it *B. townsendi* var. *steelii*, after all. The exact specific value of such forms is very hard to determine, so that much room is left for individual differences of opinion. Probably most satisfactory results will be obtained by experimental methods—transferring doubtful forms from one plant or locality to another.—T. D. A. COCKERELL.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc. D., New Brunswick, N. J.

New method of destroying Caterpillars.—My attention has been called to a new remedy for noxious caterpillars, at least for caterpillars of *Phryganidia californica* Pack., and I want to make known this remedy to economic entomologists, that they in turn may commend it to "anxious inquirers." During this month, (September) much injury to live oak trees on the Palo Alto estate, and in the village of Palo Alto has been done by the larvæ of *Phryganidia*. The caterpillars are at present in force on the grounds surrounding President Jordan's residence near the university, but are being reduced in numbers by the enthusiastic endeavors of Dr. Jordan's pet monkey "Bob" to eat them all. Bob is aided in his praiseworthy work by "Little Monk," a dilapidated and stub-tailed cousin of diminutive size, but glorious appetite, and by "New Monk," a serious looking recent importation from Java. A sight of Little Monk in his capacity as remedy for noxious caterpillars, would convince the most fogyish adherent of old-time Paris-green and pyrethrum methods that money spent for spraying machines, while monkeys are in the market, is foolish expenditure. Little Monk seated at the base of a live oak's trunk gathers in with steady rhythmic motion the luckless yellow-backed crawlers and crams them into his mouth, which is working with similar clockwork regularity and with absolute certitude of effects. He gradually moves round the trunk; he explores the grass-covered ground beneath the spreading branches of the tree and with the keenness of an *Ichneumon* and the rapacity of a *Vedalia*, he discovers and destroys the Phryganidian hosts. With a natural taste for climbing and with this peculiar taste, perhaps recently acquired, for caterpillars, what a frolic and feast awaits Little Monk. When he shall visit the doomed Phryganidians on their native heaths, *i. e.*, in the live oak's dense tops. In the short time in which I watched Little Monk and Bob posing as remedy for caterpillars they ate hundreds of the worms; and in the case of neither was there apparent any abatement of zeal or appetite. When the monkey trio are not figuring as remedy they afford rare diversion for the house-hold and guests of their owner, which is another point of advantage which this new weapon of the economic entomologist has over a can of Paris-green or a knapsack sprayer. On the whole, Bob and Little Monk and the serious-faced importation from Java as house-hold pets, evolutionary problems and insect eradicators seem to be very worthy of that widening of their fame, it is hoped the publishing of this note may give them.—VERNON L. KELLOGG.

The above experience reminds me of a story told by Prof. Fernald of his experience in one of the zoological gardens of Europe, I forget exactly in which city. The trees were very badly infested by the "Nonne" caterpillars, and, if I recollect it aright, some of the visitors were feeding the

monkeys with these caterpillars. Prof. Fernald suggested to the keeper, as a joke be it understood, that it would be a good plan to send the monkeys into the trees to clear off the caterpillars. An American joke being entirely beyond the comprehension of the keeper he went to a great deal of trouble to state the argument against the possibility of any such a proceeding; but after all Prof. Fernald's suggestion was a great deal better than he supposed at the time, and possibly instead of importing parasitic and predaceous insects to assist us in destroying the injurious species it might be desirable to import a troop of monkeys for that purpose. The matter is repectfully suggested to the U. S. Department of Agriculture for preyful consideration.

Cranberry Insects.—In a recent issue from the Office of Experiment Stations of the U. S. Department of Agriculture, in Washington, under the head of "Farmer's Bulletin," we have a treatise on Cranberry Culture in which cranberry insects are incidentally treated. Ordinarily, it is possible to praise, unreservedly, whatever publications come from the U. S. Department of Agriculture; but in this instance we have a Bulletin written by a man who has not the slightest idea of the present status of cranberry culture who describes methods of growing them in use twenty years ago, when cranberry culture was in its infancy, and who gravely recommends procedures and selections of soil which experience has proved to be absolutely wrong. The whole paper is a compilation and professedly so; but it is a compilation made up of antiquated sources in most instances, and without any information at all as to what has been learnt in recent years by hard-bought experience and by study, in Massachusetts and New Jersey. So far as the entomological portion of the treatise is concerned, it is not absolutely wrong; yet it is not sufficient as a guide to any cranberry grower. It is a pity that it is possible to receive from the U. S. Department of Agriculture a publication of the description of this Bulletin on cranberry growing and cranberry insects. It throws discredit upon the entire series of "Farmer's Bulletins," and the question at once arises in the mind of a cranberry grower who receives this Bulletin:—is all the work done on these Bulletins of the same character as this upon the cranberry and cranberry insects; If so, what is the use of these compiled "Farmer's Bulletins?"

The Codling Moth.—Nothing would seem to be more settled in the domain of economic entomology than that there are two broods, annually, of this insect. Everybody who has written on the Codling moth, including myself, has stated positively, either from actual observation or following those who have actually observed, that there were two and sometimes three broods. To throw doubt upon the correctness of this statement seems almost like heresy, and I do not mean to suggest that two broods in the Middle States is not a rule. But that it is a rule without many exceptions I am inclined to doubt from the result of some experiments and observations that I have made in the course of the past three

years. Some three Summers ago I was arranging a box of apple tree insects and found that I was short of specimens of the Codling moth in all stages. It was then early Summer, and I knew that I could get an abundance of the larvæ from the less than half-grown fruit in almost any orchard that I chose to visit, and I believed that in the course of a very few weeks thereafter I would have as many moths and chrysalids as I chose to take the trouble to raise. Accordingly, on the first suitable occasion I filled my satchel with infested apples, and an alcohol bottle with a lot of full-grown, or nearly full-grown larvæ. The apples were distributed in breeding-jars and were left. In a very few days the caterpillars began to leave them and to spin up on the sides of the cages and against the cloth covering of the tops. I waited patiently for the pupæ and continued to wait for the balance of the season; but none of the caterpillars, and there must have been forty or fifty of them that had spun cocoons, showed the slightest disposition to change to pupæ in the thin cocoons which they had spun. They rested quietly in the larval stage throughout that entire Summer, and well along in the Winter without changing, and then, as I needed the cages for other purposes, I threw them all out, saving some of the cocoons merely. Next Spring I found no difficulty in supplying myself with pupæ from beneath the loose bark of trees in the orchards, and in due time got a supply of moths. I was curious, however, to know whether my experience during the Summer previous had been accidental or whether there was anything like a rule in the matter, and again, before mid-Summer, I gathered a supply of infested fruit, disposed of it as before, and had exactly the same experience repeated. Not one of the larvæ pupated during the Summer and not a single moth was bred. Again during the Summer just past I tried the same experiment. In June I gathered a lot of infested apples and from these the larvæ, full-grown, came out early in July, spun up against the sides and top of the jar, and there they still remain at the present time, October 8th, living, apparently just as large as they were in the beginning, and without any sign of any intention to pupate. I have not felt like calling attention to this matter before, because it seemed absurd to suggest that there are not two broods of this insect. Every observer, without exception, who has recorded his personal experience, has spoken of two broods. Prof. Riley, in his Missouri Reports, gives definite dates for the appearance of the second brood of larvæ and of the moths. I have myself very frequently found infested fruit long after mid-Summer; and wormy apples in September and October are too common to be worthy even of notice. But, on consideration, is it not rather surprising that the apples that mature in September and October are not very much more infested than they really are? Any one who has spent any time in orchards will remember what a very great number of wormy apples he can find late in June and during the early part of July. In unsprayed orchards it seems as if anywhere from 75 per cent. to 90 per cent. of the apples were wormy; but in that same orchard before the apples mature in September, wormy apples are comparatively scarce. That is, scarce

compared with the very large number which seem to be infested earlier in the season. Is it not, perhaps, possible that we have only a practical second brood of this insect? I have raised the question here and now, in order to bring out, if possible, any confirmatory or opposite experience that any of the readers of the NEWS may have to offer. I do not mean to cast doubt upon the existence of a second brood of Codling moth. My question is, are there not exceptions to this rule, and are not the exceptions perhaps more numerous than the rule itself? Observations, if positive on both sides of this question, would be extremely useful.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

HER CURIOUS CALLING.—In Paris some time ago the inhabitants of a certain street were attacked by an inexplicable irritation of the skin. All up and down the street people were scratching themselves from morning till night. This sort of thing continued till all the dwellers in that locality looked like lepers. Finally the authorities investigated the matter, and found that the doings of a certain female resident in that quarter were the cause of all the trouble. She was a breeder of ants, or more strictly, a raiser of ants' eggs for the fattening of young pheasants. She wore a close-fitting suit of leather to protect herself. She was compelled to transport her establishment out of the city.—*Philadelphia Record.*

PHOTOPSIS IS NOCTURNAL.—I have to-day learned from Mr. Fox, much to my surprise, that Hymenopterists are not aware that *Photopsis* is nocturnal in its habits; whereas the allied Mutillid genus, *Sphærophthalma*, is strictly diurnal. In all my collecting in New Mexico and Colorado, I never remember catching a *Photopsis* by day (except, indeed, specimens drowned in a horse trough at the New Mexico Agricultural College, and what I believe to be a ♀ *Photopsis* under a box at Santa Fé), whereas they everywhere come in great abundance to lights at night. Of course, the presumably apterous ♀ cannot fly to the lights, and this is doubtless the reason why they are not found. *Sphærophthalma* has very different

habits, running and flying in sandy places during the hottest part of the day; *never* coming to lights at night.—T. D. A. COCKERELL, N. Mexico Agricultural Experiment Station.

I NOTICE in vol. v, No. 8, of October, 1894, that at the meeting of the Economic Entomologists held in Brooklyn, N. Y., October 14th and 15th, that "Mr. Southwick presented a note on the Wood Leopard Moth in the parks of New York City." He also advocates the use of the electric lights to attract the moths. Now, this is the point I wish to call your attention to. At the beginning of April, this year, I called upon Mr. Squire, the Commissioner of Parks in Brooklyn, and I was telling him about the deplorable condition of the trees in Brooklyn and New York from the *Zeuzera pyrina*. He then asked me what remedy I proposed to help keep the pest down, and I then told him that if the city would erect electric lights all over the wooded part of Prospect Park that they would act as a "trap" for this pest. I have seen from three year's constant visits to Prospect Park (close to which I lived at that time) that the few electric lights that they have there would be filled, "as it were," in the morning in the season when the moth emerges. This, undoubtedly in my mind, is one of the very best, and one of the cheapest methods of destruction to this moth, as it is very partial to a bright light. I have a "trap," also, which can be used for catching the *males*, and as the insect in question is a borer, the manner of reaching it for destruction is very limited, but the electric light is a sure and valuable way, and it should not be left too long or they will find that every valuable tree in New York and Brooklyn will be beyond help, and then there will be a lament that it had not been attended to at the right time. Now is the right time, this has been going on to my knowledge in the parks of New York and Brooklyn since 1878, for I took the imagoes then, and know what it was, having seen it in Europe. So, if we can get our scientific papers to hammer away they will possibly do something to help our cities keep some of the trees, which are, and should be, one of the most pleasing sights to a people who continuously remain within its limits.—H. G. WHITE.

MONONYCHUS VULPECULUS Fab. AND ITS PARASITES.—This Curculionide was taken abundantly at Sparrow Lake, Ontario, from June 20th to 27th, on flowers of *Iris versicolor*, in the young seed pods of which it was ovipositing. These pods are triangular, many of them more than four inches in length and half an inch in width, containing at each angle a geminate row of large, compressed, closely-packed seeds, each one of which contains enough of nutriment for the sustenance of one larva, though many feed on two contiguous seeds. Many of the pods have nearly all the grains infested. The parent beetle perforates the pod on the side of the angle with her beak and turning round inserts an egg into the puncture, and so proceeds along the pod at short intervals. The larva has the general appearance of that of a *Balaninus*, and transforms within the shell of the seed on which it has fed without spinning a cocoon;

it seems to attain its growth in from four to five weeks, while it remains a pupa perhaps seven or eight days. As the seed capsule is dehiscent when ripe the beetle probably remains within till that occurs.

Comparatively few of the larvæ, however, reach maturity, perhaps not over one in one hundred, the undue multiplication of the species being kept in check by two relentless Hymenopterous parasites kindly determined by Mr. E. T. Cresson as *Pimpla* (*Ichneumon*) *inquisitor* Say, and *P. pterelas* Say (Lec. ed. i, 375–376). These insects are possessed of very long ovipositing organs with which their eggs are conveyed within the pod, though the operation was not seen. This probably occurs several days after the oviposition of the *vulpeculus*, so that its larvæ may have time for growth previous to the attack of that of the *Pimpla*. When the *Pimpla* larva finds that of the *vulpeculus* it attaches itself to it by mouth and retains its hold with great tenacity, considerable force being required to separate them. The *vulpeculus* larva soon dies, and the other fattens rapidly on its decomposing juices; in case one is not sufficient for its full growth it attacks another, and perhaps another, till maturity is attained. This happens when a small parasite attacks a small host, but in case the host is full grown, one is sufficient. The larvæ of these *Pimplas* likewise feed on one another, as several times I have seen one attached to a *vulpeculus* larva and another to this. As soon as the *Pimpla* larva is full fed it pupates, without spinning a cocoon, and the perfect insect escapes by gnawing a hole through the side of the capsule. The time of develment from egg to imago can scarcely exceed twenty days.—J. HAMILTON.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be **limited to twenty-five** for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III, Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

1. REPORT OF THE ENTOMOLOGICAL DEPARTMENT of the New Jersey Agricultural College Experiment Station, by John B. Smith, Sc. D., for the year 1893. Trenton, N. J., 1894. Extract from N. J. Agr. Coll. Exp. Station Report 1893, pp. 437–603, 197 figs. Prof. Smith is so well and favorably known for his work on these lines, that it would be presumptuous on our part to attempt anything in the way of reviewing the above cited Report other than to refer it to the honored and esteemed editor of the Department of Economic Entomology of the NEWS for *his* critical opinion.

2. BULLETIN OF THE AMERICAN MUSEUM OF NATURAL HISTORY, vi, pp. 249–272. New York, September, 1894.—Notes on some species of North American Orthoptera, with descriptions of new species, W. Beutenmüller. Descriptive catalogue of the Orthoptera found within fifty miles of New York, id.

3. JOURNAL OF THE COLUMBUS [OHIO] HORTICULTURAL SOCIETY. April, 1894.—Vegetal parasitism among insects, F. M. Webster, figs.

4. PROCEEDINGS OF THE NATURAL SCIENCE ASSOCIATION OF STATEN ISLAND, iv, 6. April 14, 1894.—Notes on *Bryaxis abdominalis* Aubé, C. W. Leng. Seventeen-year locust pupæ, W. T. Davis.—iv, 9, September 8th. The seventeen-year locust on Staten Island in 1894.

5. VERHANDLUNGEN DER K. K. ZOOLOGISCHE-BOTANISCHEN GESELLSCHAFT IN WIEN, xliv, 1. March, 1894.—On the tracheal system of *Locusta viridissima*, Dr. V. Nietsch, 1 pl. Contributions to the Diplopod fauna of Tyrol, Dr. C. Verhoeff, figs., 1 pl.—2, July, 1894. On the larva of *Ogcodes*, A. König. Addition to his paper on the tracheal system of *Locusta viridissima*, Dr. V. Nietsch. Contributions to the anatomy and classification of the Julidæ, Dr. C. Verhoeff, figs., 2 pls.

6. DEUTSCHE ENTOMOLOGISCHE ZEITSCHRIFT, 1894, heft 2. Berlin, August, 1894.—To the knowledge of the comparative morphology of the abdomen of female Coleoptera, Dr. C. Verhoeff, 1 fig. Contributions to the knowledge of the Dasytinæ, J. Schilsky. On *Orina* and *Liophlœus*, J. Weise. The myrmecophilous fauna of Rheinland, E. Wasmann. On the life-history and development of *Atemeles pubicollis*, etc., id. In remembrance of Prof. Hermann Hagen (with portrait), Dr. G. v. Seidlitz.

7. ZOOLOGISCHER ANZEIGER. Leipsic, Sept. 10, 1894. To the knowledge of the copulatory organs of the Julidæ, etc., Dr. C. Verhoeff. September 24th.—Remarks on A. Berlese's arrangement of the Julidæ, id.

8. TRANSACTIONS OF THE MANCHESTER GEOLOGICAL SOCIETY, pt. xxi, vol. xxii, 1894.—The Carboniferous insects of Commentry, France, M. Stirrup.

9. THE ENTOMOLOGIST'S RECORD. London, Sept. 15, 1894.—Obituary —William Machin, J. W. Tutt. The life-history of a Lepidopterous insect, etc., chap. iv, id.

10. LE NATURALISTE. Paris, Sept. 15, 1894.—Mushroom-raising ants, J. Constantin, figs.

11. COMPTE RENDU. L'ACADEMIE DES SCIENCES. Paris, Sept. 10, 1894.—On the Diptera destructive to cereals observed at the entomological station of Paris in 1894, P. Marchal.

12. GARDEN AND FOREST. New York, Aug. 29, 1894.—The San José scale, J. B. Smith, fig.

13. BULLETIN DES SEANCES DE LA SOCIETE NATIONALE D'AGRICULTURE DE FRANCE, liv, 6. Paris, 1894.—*Cecidomyia destructor*, M. Laboulbéne et al.

14. BULLETIN DE LA SOCIETE PHILOMATHIQUE DE PARIS (8), vi, 2, 1894.—Salivary glands of the Hymenoptera of the family Mellinidæ, M. Bordas.

15. PSYCHE. Cambridge, Mass., August, 1894.—Received Oct. 2, 1894. Notes on the Acrididæ of New England—i, A. P. Morse, 1 pl. Polygamy of moths, G. C. Soule, I. M. Eliot.

16. LEPIDOPTERA INDICA by F. Moore, F. Z. S. Part xviii, London, 1894. Vol. ii, pp. 137–160, pls. 131–138, Satyrinæ.

17. L'EMBRYOLOGIE COMPAREE par le Dr. Louis Roule. Paris, C. Reinwald & Cie., 1894. Pp. xxvi, 1162, 1014 figs. Arthropods pp. 452–599, Onychophora pp. 609–629.

18. ENTOMOLOGISCHE NACHRICHTEN, xx, 14–15. Berlin, July, 1894. —Some new African butterflies of the families Nymphalidæ, Acræidæ, Danaidæ and Satyridæ, Dr. F. Karsch, figs.

19. SOCIETAS ENTOMOLOGICA. Zurich-Hottingen, Aug. 1, 1894. Breeding experiments [on food], E. Hein. Noteworthy foot-formations in Hymenoptera, Dr. Rudow.

20. THE ENTOMOLOGIST. London, October, 1894.—A variety of *Vanessa cardui*, F. W. Frohawk, fig. *Charæas graminis* in southern Scotland, R. Service. The North American Noctuidæ of the genus *Ingura*, A. G. Butler. Some inmates of a decayed cherry tree, C. J. Watkins. Life-history of *Vanessa c-album* (cont.), F. W. Frohawk. The vertical distribution of *Pieris rapæ*, H. W. Bath.

21. THE ENTOMOLOGIST'S MONTHLY MAGAZINE. London, October, 1894.—The British species of the genus *Psyche* and its allies, C. G. Barrett. The *Chigæ* in Asia, W. F. H. Blandford. Observations on Coccidæ, No. 10, R. Newstead, figs.

22. CANADIAN ENTOMOLOGIST. London, Ont., October, 1894.—Sixth annual meeting of the Association of Economic Entomologists—abstract of proceedings by the acting secretary [C. L. Marlatt]. Sexual characters in Scolytidæ, A. D. Hopkins. *Platysamia columbia*, J. A. Moffat. Further notes on scale-insects (Coccidæ), T. D. A. Cockerell. Kentucky butterflies, H. H. Warner. A few remarkable variations in Lepidoptera, G. A. Ehrmann. Partial preparatory stages of *Hemileuca californica* Wright, G. H. French. Notes from my diary, Quebec, 1893 [Lepidoptera], A. W. Hanham. Insects at light, G. L. Lee. *Attacus promethea*, J. A. Field.

23. INSECT LIFE. Washington, D. C., vi, 5. September, 1894.—Bees, C. V. Riley, figs. The San José, or pernicious scale (*Aspidiotus pernici-*

osus Comst.), C. V. Riley and L. O. Howard, figs. Completed life-history of the sugar-beet web-worm (*Loxostege sticticalis* L.), L. O. Howard, figs. Numerous short notes.

24. On the Larvæ of *Lucidota*, *Sinoxylon* and *Spermophagus*, H. F. Wickham. Whence? The separate copy of this paper, which is the only one we have seen, bears not the slightest indication of the place and date of publication.

25. The Transactions of the Entomological Society of London, 1894, part iii. September, 1894.—Temperature experiments in 1893 on several species of *Vanessa* and other Lepidoptera, F. Merrifield. Mr. Merrifield's experiments in temperature-variation as bearing on theories of heredity, Dr. F. A. Dixey.

INDEX TO THE PRECEDING LITERATURE.

The number after each author's name in this index refers to the journal, as numbered in the preceding literature, in which that author's paper was published; * denotes new North American forms.

THE GENERAL SUBJECT.

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The Entomological Section

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

PROCEEDINGS OF MEETINGS.

SEPTEMBER 27, 1894.

A regular stated meeting of the Entomological Section of the Academy of Natural Sciences was held in the Hall, S. W. cor. Nineteenth and Race Streets, this evening, Dr. G. H. Horn, Director, presiding. Members present: Calvert, G. B. Cresson, Laurent, Johnson and Skinner. Associates: Boerner and Reinick. Mr. Laurent exhibited two species of *Pamphila* taken at Mt. Airy, Pa. The species were *ocala* and *phylæus;* the speaker said they were very rare, although they had previously been taken about Philadelphia. Mr. Laurent also stated that *Crioceris 12-punctatus* Linn., which is one of this country's acquisitions to its Coleopterous fauna, was introduced from the other side of the Atlantic. It was discovered in our country by Prof. Otto Lugger, near Baltimore, Md., some ten years ago. Prof. J. B. Smith found it in Salem County, N. J., in May, 1892. In the next two years it distributed itself over the greater portion of the southern half of New Jersey and has now gained a foothold in Pennsylvania, as specimens were captured by the speaker during August of the present year at Holmesburg Junction, Philadelphia. Field workers should be on the lookout for this insect, as it will be interesting to note the rapidity with which it spreads over the land; so far its progress has been slow. The insect is found in company with the well-known asparagus beetle, *Crioceris asparagi* Linn. Dr. Horn exhibited the plates illustrating his paper on the Coleoptera of the peninsula of California, which is to appear in the Transactions of the California Academy. Mr. Calvert stated that on the island opposite Wood's Holl, Mass., he had found an Agrionide heretofore only found in Florida. Mr. Johnson exhibited specimens of *Holcocephala calva*, showing abnormalities in venation. The branches of the second longitudinal vein are connected near their junction by a transverse vein thus forming a small discal cell; in one specimen this mutation is on the right side and on the left in the other. He also mentioned the capture of *Orthostethus infuscatus* at Avalon, N. J., on July 22d. Mr. Wm. J. Fox was unanimously elected a member of the Section.

Dr. HENRY SKINNER, *Recorder.*

Philadelphia, Oct. 9, 1894.—A stated meeting of the Feldman Collecting Social was held at the residence of Mr. H. W. Wenzel, No. 1509 S. 13th Street. Members present: Laurent, Boerner, Seeber, Dr. Castle, Trescher, Fox, E. Wenzel, Bland, Hoyer, H. W. Wenzel, Haimbach and Schmitz. Honorary members: Dr. G. H. Horn and Dr. John B. Smith. Meeting called to order at 9 P. M. Mr. Philip Laurent, president, in the chair. A written communication from Mr. Geo. Stortz was read. Dr. Horn made some remarks, illustrated by blackboard sketches, on the proper method of determining the genus *Scymnus*, of which the following is a brief ac-

count: "Good structural characters divide *Scymnus* into groups; these characters are found on the underside of the body. The first character of value is the form of the metacoxal plate; this is either entire, that is, united by a nearly semi-circular line, or the plate is incomplete, not forming a semi-circle. There is a similar line, but less useful for classification behind the middle coxæ. Our species of *Scymnus* may be divided into two genera—*Scymnus*, with five ventral segments, and a possible new genus with six segments. Color character must not be too strictly used, as in this respect the legs, especially, are very variable, while the style of color is quite constant." Continuing, he stated that 800 species of Coleoptera were now known from the peninsula of California, which show that the west coast as far as explored, is a continuation of the San Diego fauna. A small collection from the northern central region, at a moderate elevation, are more nearly related to the region near Los Angeles and Santa Barbara. The gulf coast of the peninsula is related in its fauna to Arizona and to some extent to Texas, while the extreme end of the peninsula, east of a line from La Paz to San José del Cabo is decidedly tropical and has a few Mexican species in it. Mr. Albert Hoyer reported the capture of a specimen of *Chlænius angustus* at Templeville, Md. A general discussion among the members followed, after which the meeting adjourned to a collation at 10.30 P. M. THEO. H. SCHMITZ, *Secretary*.

The following papers were read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS:

NEW SPECIES OF MUTILLIDÆ.

By T. D. A. COCKERELL and JESSIE E. CASAD, N. M. Ag. Coll.

Sphærophthalma heterochroa n. sp.—♀ 8.5 mm. long; dark brown, with the pubescence variously scarlet, black and yellowish white,—thus quadricolored. Head subquadrate, about as wide as thorax; face, below level of eyes, cheeks and scape of antennæ, clothed with sparse, appressed, yellowish white hairs; crown of head densely covered with appressed scarlet hairs, among which are scattered erect, long, black hairs. Antennæ brown, basal joint shining reddish. Thorax pyriform seen from above, quadrate seen from side, abruptly truncate behind. Dorsum of pro- and meso-thorax clothed similarly to crown of head with scarlet pubescence interspersed with black hairs; sides with scattered, yellowish white hairs. Metathorax reticulate, with sparse, erect, black hairs. Abdomen elongate-pyriform; first segment sessile with second, but with the suture impressed; black hairs spring from its dorsal surface; its basal portion is toothed at sides. Large second segment dorsally clothed with scarlet appressed hairs, interspersed with black, erect hairs as on head thorax, except a broad, black, basal blotch, which is obscurely trilobed. The same segment clothed on sides and beneath with sparse yellowish

white hairs. Remaining segments fringed with yellowish white hairs, except on dorsum, where immediately behind the second segment appears a large triangular patch of black fading towards its apex. Legs dark brown, with sparse, yellowish white hairs; tibial and tarsal spines black.

Two ♀ specimens; San Angustine, on east side of Organ Mountains, N. Mex., Aug. 29, 1894 (Ckll., 2282); Las Cruces, N. Mex., Aug. 25, 1894 (Ckll., 2036). The first-mentioned now in coll. Am. Ent. Soc., the other in coll. N. Mex. Agr. Exp. Sta.

The scarlet color is about the tint of a specimen of *S. occidentalis* from Florida, received from Mr. Fox. Of the species seen by us, none could be compared with *heterochroa;* and a search through the descriptions fails to bring to light anything which agrees with it, according to our judgment.

Sphærophthalma megacantha n. sp. ♀.—About 13 mm. long; terra-cotta red, with more or less black and pale hairs. Head very large, a little wider than thorax, quadrate seen from above, sides and base meeting almost at right angles; posterior margin below prolonged downwards into a strong spine; vertex and cheeks strongly punctured, terra-cotta red, clothed with rather sparse, appressed hairs of the same color, and scattered, erect, black hairs. Face concave; antennæ situated in the concavity, dark brown, scape with pale hairs. Mandibles large, tipped with black, their basal portions more or less overlapped by long pale hairs. Thorax broader in front than behind, deeply excavated at sides, posteriorly truncate; punctures, color, appressed hairs and erect hairs as on head, save on the metathorax, where the black hairs become larger and much more numerous. Abdomen elongate-pyriform, first segment broadly sessile, clothed with erect, black hairs, and a fringe of appressed black hairs extending over its junction with the second segment; second segment covered like head and thorax, with a fringe of black hairs at its posterior margin. Remaining segments red, with fringes of mixed black and pale hairs. Underside of abdomen with pale hairs. Legs shiny, piceous, sparsely clothed with rather long pale hairs. Femora sparsely punctured.

Hab.—Guanajuato, Mexico (Dr. A. Duges). One specimen.

Sphærophthalma dugesii n. sp. ♀.—About 12 mm. long. Brown, pubescence variously colored, dull yellow, black and scarlet. Similar in size and structure to *S. sumichrasti* (of which we have a specimen, sent by Mr. Fox); and in color intermediate between *sumichrasti* and *heterochroa*, the head and thorax suggesting the former, the abdomen the latter. Head about as broad as thorax, punctured, clothed, as in *sumichrasti*, with pale ochreous pubescence, with a few black, erect, hairs interspersed. Antennæ rather paler than in *sumichrasti;* brown, darker towards tips, with some yellowish white hairs on scape. Thorax clothed, as in *sumichrasti*, with black and pale ochraceous hairs, but the disposition of the

black hairs is different, whereas in *S. sumichrasti* there extends backwards from the prothorax a large triangle, the sides of which are each longer than the base, and the apex of which is truncate; there is in *dugesii* a smaller black triangle, the base of which occupies the whole front of the thorax, and is broader than either side. The apex of this triangle joins the apex of another black triangle, the base of which is the breadth of the metathorax. These two black triangles together form an hour-glass shaped mark. The yellow pubescence to the sides of thorax forms two triangles, the sides of which are adjacent to the black triangles; these triangles do not, of course, meet in the middle line. Legs castaneous, spines and ends of middle and posterior femora black. Abdomen elongate, pyriform; first segment broad, but somewhat constricted at apex, bearing on each side a small, stout spine; second segment clothed above with scarlet hairs, but having its base and apex fringed with pale ochraceous hairs, except that at the base dorsally is a large, squarish black patch, interrupting the pale fringe and extending somewhat into the red. This patch shows a slight tendency to be trilobed, as in *heterochroa*. Remaining segments of abdomen, except last, fringed with pale ochraceous hairs, except a large black triangle on dorsum, having for its base the margin of the second segment. Last segment black.

Hab.—Guanajuato, Mexico (Dr. A. Duges). One specimen.

Brachycistus elegantulus n. sp. ♂ 6–7 mm. long.—Head black, sparsely hairy, mandibles rufous; antennæ dark honey-color, sutures darkened, first joint of flagellum about as long as second; antennæ very long; palpi pale yellow; eyes large and prominent, ocelli prominent. Thorax somewhat narrower than head, honey-color, moderately dark; metathorax rounded and gradually descending, not reticulate. Legs honey-color, somewhat lighter than thorax, slightly hairy. Abdomen slender, shiny, sparsely hairy; first segment dark honey-color, rest of abdomen deep fuscous; first segment elongate, hardly constricted at apex. Wings hyaline, nervures pale fuscous; stigma very large, dark brown. Marginal cell very small and short, very narrow, and almost wholly beneath stigma, terminally appendiculate. First submarginal cell large, about as long as stigma, extending beyond second submarginal; second submarginal very small, elongate, subtriangular, receiving first recurrent nervure at base or (in some specimens) a little beyond. Third submarginal subquadrate, tending to subtriangular, receiving the second recurrent nervure before the middle.

This little species was taken in numbers by Prof. E. O. Wooton and the present writer on the Mesa east of the New Mexico Agricultural College on the occasion of a meeting of the College Field Club on the evening of Sept. 22, 1894. They were attracted by means of lights, being, like others of the genus, strictly nocturnal.

The species will be readily distinguished by its small size, dark head and abdomen and contrasting thorax and slender build. The specimens are uniform in respect to the specific characters, and show no intergrades with other species. Allied to *B. petiolatus* Fox, from Lower California.

PHOTOPSIS *versus* BRACHYCISTIS.

By WILLIAM J. FOX.

In 1871,* Blake described a genus under the name of *Agama*, which name he subsequently changed to *Photopsis*, the first mentioned being pre-occupied. The original description is as follows:

> Body unicolorous, smooth and shining. Head transverse; eyes large, round and prominent; ocelli large; antennæ long and slender. Thorax narrowed posteriorly. Wings hyaline, sometimes slightly clouded, stigma prominent. Abdomen sparsely clothed with pubescence, basal segment more or less petiolate, apex ♂ furnished with two minute recurved spines. Female unknown.

No type of the genus was mentioned.

A study of the species included in *Photopsis* will show that very few of them really fit the above description, as many are strongly punctured, the antennæ not long (not longer than in the males of *Sphærophthalma*), the color of the wings varies considerably, and the abdomen is usually rather densely pubescent.

The only character worthy of importance in which these forms agree with the above description is that they possess two spines at apex of abdomen.

In 1893,† I described a new genus, to contain a number of smooth bodied, sparsely haired forms, which differed also from the usual type known as *Photopsis*, in having but one spur at apex of middle tibiæ, very long antennæ, and large stigma. Under this genus which I called *Brachycistis*, I placed the following species, previously known as *Photopsis*:

P. ampla Bl., *nitida* Cr., *alcanor* Bl., *atrata* Bl., *sobrina* Bl., *lepida* Bl., *castanea* Cr., *glabrella* Cr., and a new species, *petiolatus*.

Since describing this genus, I find it fits Blake's original description of *Photopsis* (= *Agama*) very well, except in one important

* Trans. Amer. Ent. Soc.

† Proc. Calif. Acad. Sciences, ser. 2, vol. iv.

point, namely, that there is *but one spine* at tip of abdomen. It will be seen from this that Blake had gathered representatives of two genera under *Photopsis*, and the question to be decided is to which belongs the name *Photopsis*.

The fact that Blake states in the description of *Photopsis* that the apex of ♂ is armed with *two spines*, proves, in my opinion, that the name really belongs to those rather coarsely sculptured species with two spurred tibiæ, of which *mendica*, *danaus*, *tapajos* and *nebulosus* are examples, and which have this character, and, further, while no type of the genus has been mentioned by Blake, and the value of such evidence on that account is somewhat lessened, yet he places as the first species in his list *P. mendica*—a true type of the coarsely sculptured, two spined species. Further study on these species indicates that they belong to the genus *Sphærophthalma*, not differing from that genus in any respect. Consequently it will be seen from the evidence at hand that *Photopsis* must fall as a synonym of *Sphærophthalma*, and the species which Blake *may* have meant for that genus, although the evidence is to the contrary, should stand as *Brachycistis*.

A NEW SPECIES OF MUTILLIDÆ.

By William J. Fox.

Sphærophthalma toumeyi ♀.—Ferruginous. Head from above quadrate, the posterior angles spinose; beneath, on the cheeks, there is a rather long, stout spine; the head is clothed rather densely with appressed pale golden hair, and in addition has sparse, erect hairs; the thorax with sparse, erect, hairs, and viewed from above appears in shape like a short oblong, the sides of which are a little contracted medially, and possess quite a few small teeth; first abdominal segment uniting evenly with the second, and with silvery pubescence at its apex, which extends on the base of the second segment, this possesses two large, round spots of pubescence of the same color; beyond these spots the segment is castaneous, and the last segment is also of that color; the third to fifth dorsal segments are more or less clothed with silvery pubescence; like the head and thorax, the abdomen is sparsely clothed with erect hairs. Length about 3 mm.

Resembles *minutissima* in size and markings, but differs by spinose head. From *canadensis*, to which it is apparently more closely related, it differs by the spined posterior angles of the head, smaller size, and the markings. The specimens were contained in a collection of ants from Tucson, Ariz., sent for identification by Prof. J. W. Toumey, of the University of Arizona, to whom it is dedicated.

Two Families of Spiders new to the United States.

By NATHAN BANKS.

The two families of Leptonetidæ and Oonopidæ, comprising very small, pale-colored spiders, are best described by comparison. The cephalothorax is broad; the dorsal groove is indistinct or wanting; there are rarely any radial grooves; the eyes are but six in number, or sometimes none; usually surrounded by a patch of black; the mandibles quite large and long, and with a long fang, and with some stiff bristles or teeth on the superior margin. The lip usually short, triangular, or broadly rounded; the maxillæ are inclined over the lip, but do not touch as in the Scytodidæ; the sternum broad; the legs quite long and slender, mostly destitute of spines; the abdomen more or less globose.

It is considered that the Oonopidæ have four stigmata, or lung openings, on the venter, and the Leptonetidæ but two; but the second pair is so indistinct as to be practically valueless as a character; indeed, one genus, undoubtedly a Leptonetid, has been described as having four stigmata. The Leptonetidæ have three claws to tarsi and the Oonopidæ but two. A most useful secondary character is that in the Leptonetidæ; the first pair of legs is longer and their femora stouter than the other pairs; while in the Oonopidæ it is the fourth pair which is usually longer and the femora much thickened. The eyes in the Oonopidæ are larger and more in one group than in the Leptonetidæ. Some of the Oonopidæ have horny shields upon the abdomen, the Leptonetidæ have always a soft body. In the Leptonetidæ, as in the Scytodidæ, there is a little conical projection between the spinnerets, called the *colulus*; this is not present in the Oonopidæ. The cephalothorax in the Leptonetidæ is generally highest at or in front of the middle, while in the Oonopidæ it is highest behind the middle and slopes to the clypeus.

LEPTONETIDÆ.

In the Proc. Ent. Soc. Washington, 1891, Dr. Marx described from Keyserling's manuscript a little spider under the name of *Usofila gracilis*. It was said to have four stigmata, and was placed in the Dysderidæ. Simon soon noticed that it was allied to the Leptonetidæ, and thought it was his genus, *Psiloderces*. I have lately seen a specimen and feel sure it is a Leptonetid and agrees with Simon's genus. I cannot see any stigmata

behind the lung-slits. Mr. Kincaid, of Washington State, has sent me another Leptonetid, belonging to another genus and agreeing quite well with *Ochyrocera*, though the inferior spinnerets are widely separated.

The genera may be separated by the position of the side-eyes.

The s. e. form a diverging line and touch by their sides . . . **Usofila.**
The s. e. touch at one point and form a single opening within **Ochyrocera.**

USOFILA Keys.

Marx, Proc. Ent. Soc. Wash., 1891, p. 35.
Psiloderces Simon, Amer. Soc. Ent. Fr., 1892, p. 40.

Usofila gracilis Keys. Length 11 mm.—Pale yellow, abdomen whitish; cephalothorax broadly rounded, quite high a little behind eyes, smooth; the s. e. are more than their diameter from the slightly larger m. e. Mandibles quite prominent and diverging; sternum plainly longer than broad, triangular, legs long, first pair longest, the femora, especially femur i, slightly incrassated, all with scattered hairs; abdomen globose, with a few scattered hairs, sometimes a white spot above spinnerets. Male palpus consists of a pyriform bulb, with a short curved tube, tarsus nearly as long as the bulb, tibia and patellæ subequal.

From caves in California.

OCHYROCERA Simon.

Simon, Proc. Zool. Soc. London, 1891, p. 565.

Ochyrocera pacifica nov. sp.—Length 12 mm. Cephalothorax, legs and palpi yellowish; abdomen above gray, sternum and venter blackish, eyes surrounded with black. Cephalothorax but little longer than broad, truncate behind, slightly arched, highest behind eyes, no median groove and radial furrows extremely faint; clypeus narrower than length of eye-row; s. e. close to the equal m. e. Mandibles vertical, barely diverging, quite long, with a row of stiff hairs on superior margin; lip full as broad as long; sternum triangular, barely longer than broad in front. Legs slender, first pair longest, third femur longer than cephalothorax, all incrassated toward base, and with scattered hairs. Abdomen globose, with a few hairs above, spinnerets short, the inferior pair longest and quite wide apart at base, disclosing a distinct colulus. Region of epigynum swollen, a pale area containing a transverse reddish patch.

One female, Olympia, Washington (Trevor Kincaid). This differs from *Ochyrocera* in having the inferior spinnerets widely separated, and in the shorter lip; yet it is much nearer to this genus than to any other, and I dislike, at present, to erect a separate genus for it.

OONOPIDÆ.

In the Summer of 1894 I found on my desk at Sea Cliff, N. Y., a little spider, which, when touched by the pencil, leaped backward an inch to an inch and a quarter. It was collected, and to my surprise, belonged to *Orchestina*, the species of which are known to leap, and at least one of which occurs in southern Europe.

ORCHESTINA Simon.

Simon, Amer. Soc. Ent. Fr., 1892, p. 237.

Orchestina saltitans nov. sp.—Length 11 mm. Cephalothorax whitish, with a black marginal line and a black spot around eyes; mandibles pale; legs and palpi yellowish; sternum whitish; abdomen purplish above, quite dark near tip, venter pale, spinnerets white. Cephalothorax quite broad, yet plainly longer than broad, and broadest a little before the middle; highest behind the middle and sloping to the narrow clypeus; no dorsal groove nor radial furrows; three rows of curved hairs above; eyes large, subequal, all close together. Mandibles quite long, vertical; lip quadrangular, broader than long; sternum triangular, longer than broad, emarginate in front, tapering behind and prolonged between the posterior coxæ. Legs long and slender, fourth pair as long as first, third pair much the shortest, quite thickly clothed with hairs, two prominent claws; posterior femora greatly thickened, fully twice as broad as femur i, and not much over four times as long as broad. Abdomen nearly globuse, but a little longer than high, quite thickly clothed with stiff hairs; spinnerets all close together; region of epigynum slightly swollen, a transverse furrow, beneath which is a pale area crossed by a yellow line.

Sea Cliff, N. Y., July.

ERRATA.

Vol. v, p. 267, ninth line from top for anal *read* oval.
Page 268, for New York *read* New Jersey.
" 224, for *Coptocycla significa* read *C. signifera*.

ENTOMOLOGICAL NEWS for October was mailed October 1, 1894.

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ENT. NEWS, vol. v, pp. 227-232, to replace the Index on pp. 232-233. (The Index to Entomological Literature published in the NEWS for September contains so many errors that it becomes necessary to publish this corrected copy which may be inserted in its proper place.—P. P. C.)

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